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AUTHOR Savard, William G.
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ABSTRACT

A unique feature of the Research on School Effectiveness Project (part of a larger program for school effectiveness initiated by the State of Alaska) is an intention to base the development of new standards for effective schooling upon documented research findings. First, a list of variables affecting some part of the educational community was generated; some were changed to correspond more closely to the descriptors used in the ERIC system. Next, the process of identifying and retrieving appropriate materials was facilitated by the Alaska Department of Education's contract to use the services and resources available through the Northwest Regional Education Laboratory (NWREL) Information Center, a special purpose library with a computer terminal for direct access to the ERIC files and other data bases in the Lockheed Information System. Sample "Item Report" and "Summary Report by Category" forms are included to show how material identified for its usefulness and quality of study is analyzed. An information flow chart depicts the search, analysis, and synthesis procedure. Appendices include formats of the two forms used, a list of standards for rating studies, and a sample copy of a decision display. (ERB)

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RC

# PROCEDURES

# FOR

# RESEARCH ON SCHOOL EFFECTIVENESS PROJECT

MAR 1982
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Prepared For:

Alaska Department of Education
Office of Planning and Research

by

William G. Savard
Audit and Evaluation Program
Division of Education, Research and Assessment

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December 10, 1980

Audit and Evaluation Program
Northwest Regional Educational Laboratory
710 S.W. Second Avenue
Portland, Oregon 97204

RC 013234

## Introduction

The Research on School Effectiveness Project is a part of a larger program for school effectiveness initiated by the State of Alaska. It is expected that the overall program will result in the generation of state standards for effective schooling and, ultimately, methods and procedures for monitoring and evaluating compliance with those standards.

A unique feature of the Research on School Effectiveness Project is an intention to base the development of new standards for effective schooling upon documented research findings. It is held that, if we, as a community of professional educators and concerned, informed citizens, do know with reasonable confidence that certain educational practices are effective, we are bound to put them into action as fully as possible. On the other hand, if there are educational practices for which we can find no evidence, or only weak, contradictory or inconclusive evidence of effectiveness, then we have no justification to require or even strongly suggest that they be used, no matter how appealing or logical they may seem to an interested proponent.

Local options and local educational decision making will be preserved. The new standards will be suggested options which the local community of citizens, advised by their professional educators, cannot ignore. No coercion is intended, except for whatever coercion is inherent in documented evidence. Research, especially educational research, never proves anything, but it may at times produce evidence that is strongly suggestive--so strong that it cannot reasonably be ignored. The searching out of these

strongly suggestive pieces of educational research is the object of this present project. It is a prelude to, and a necessary step which must be taken before the larger step of actually developing and selecting standards.

The Research on School Effectiveness Project is not seen as a limited, one-time effort. The body of documented educational research is vast and it is, of course, being added to daily. It is intended that the project be continued into the reasonable future for as long as it yields useful information for policymaking on school standards and practices. The first phase of the project is, understandably, of limited duration and depth. The Alaska Department of Education contracted with the Northwest Regional Educational Laboratory to conduct a preliminary search of the research literature and, perhaps more importantly, to develop methods and procedures whereby such a search can be conducted systematically, continuously, economically, and with the feature of possible replication, so that findings can be challenged, changed, or otherwise modified if better evidence becomes available. This initial phase will occupy approximately two months, November and December of 1980, and will culminate with a set of reports on effective school practices to the Governor's Task Force on Effective Schooling, plus this present document as a recommended procedure to extend the search for documented evidence on educational practices which really work.

On November 4, 1980 a meeting was held in Juneau between a design group representing the Department of Education and the contractor for the preliminary study, the Northwest Regional Educational Laboratory, Division of Evaluation, Research and Assessment. A list of possible

variables to be investigated was generated by the Department of Education design group, and a set of approaches and procedures to be used in the investigation was presented by the contractor. Mutual agreement was reached on both the variables and the procedures. The contractor was given the tasks of further refining and defining the variables and procedures and of initiating a search of the literature using the new procedures. The remainder of this paper will consist of an exposition of the list of variables and an outline of the procedures which are followed in the search and analysis of the literature.

## Variables to be Investigated

The original list of variables (categories) generated at the November 4 meeting is included in the appendix. That list was subsequently expanded slightly, and more importantly, was partitioned into two lists of variables: one group which can, under certain circumstances, be modified; and the other group, which usually must be considered as given. A few of the variables appear on both lists. For example, teacher characteristics in a school can be modified over time by selective hiring, transfering and training; but in the short run, because of tenure considerations, difficulty in recruiting and other factors, must often be considered as givens in a particular situation.

The variables which may be controlled or, at least, strongly affected by some part of the educational community, and the variables which must, at least under certain circumstances, be taken as given, follow as Charts 1 and 2, respectively. Both lists are subject to further modification. In addition, the labels for some of the items have been changed to make them correspond more closely to the descriptors used in the ERIC system.

CHART 1

VARIABLES WHICH MAY BE CONTROLLED OR AT LEAST STRONGLY AFFECTED BY SOME PART OF THE EDUCATIONAL COMMUNITY

| Original Descriptors | ERIC Descriptors |
|---|---|
| Class Size | Class Size |
| School Size | School Size |
| Physical Facilities | Facilities |
| Provision of Materials/Equipment/ Technology | Media Selection/Educational Technology |
| Textbooks | Textbooks |
| Media Centers/Audiovisual Equipment | Learning Resource Centers/ Audiovisual Aids |
| Computer Assisted/Managed Instruction | Computer Assisted Instruction/ Computer Managed Instruction |
| Libraries | School Libraries |
| Nutrition | Nutrition |
| General Level of Financial Support | Financial Support |
| Teaching Strategies/Instructional Practices | Teaching Methods |
| Differentiated Staff (including use of aides) | Differentiated Staffs |
| Individualization | Individualized Instruction |
| Diagnosis/Prescription | Diagnostic Teaching |
| Use of Required Homework | Homework |
| Pupil Grouping | Grouping (Instructional Purposes) |
| Bilingual Approaches | Bilingual Education |
| Time on Task | Time Factors (Learning) |
| | Class Organization |
| Instructional Leadership | Instructional Development/Leadership |
| Role of Principal | Principals/Instructional Development |
| Other Instructional Leadership | Instructional Development/Leadership |
| Administrative Practices/Policies | Administrative Policy |
| Teacher Evaluation | Teacher Evaluation |
| School "Climate" | Educational Environment |
| Student Activities | Extracurricular Activities |
| Existence and Type of Parent Involvement Programs | Parent Participation |
| Staff Development and Inservice Training Programs | Inservice Teacher Education |
| Existence of Preschool Programs | Preschool Education |
| Attendance Improvement Programs | Attendance/Improvement Programs |
| Teacher Characteristics | Teacher Characteristics |
| Teacher Certification | Teacher Certification |
| Teacher Competence in Content | Teacher Qualifications/Intellectual Disciplines |
| Teacher Training in Pedagogy | Teacher Education/Instruction |

CHART 2

VARIABLES WHICH MUST (AT LEAST UNDER CERTAIN CIRCUMSTANCES)
BE TAKEN AS GIVEN

| Original Descriptors | ERIC Descriptors |
|---|---|
| Student Characteristics | Student Characteristics |
| Ability | Academic Ability |
| Socioeconomic Status | Socioeconomic Status |
| Language Background | Child Language |
| Subject Matter | |
| Grade Level | Instructional Program Divisions |
| Home Environment | Family Environment |
| Attendance | Attendance |
| Degree of Parent/Community Involvement | Parent Participation/Community Involvement |
| Teacher Characteristics | Teacher Characteristics |
| Teacher Certification | Teacher Certification |
| Teacher Competence in Content | Teacher Qualifications/Intellectual Disciplines |
| Teacher Training in Pedagogy | Teacher Education/Instruction |
| | Teacher Behavior |
| | Teacher Attitudes |

Chart 1 might be thought of as the vertical axis of a matrix, with Chart 2 describing the items on the horizontal axis. Such a matrix might be used later as a framework for analysis and subsequent synthesis.

Search, Analysis and Synthesis Procedure

The process of identifying and retrieving appropriate materials is facilitated by the services and resources available through the NWREL Information Center, a modern, special purpose library with a computer terminal for direct access to the ERIC files and other data bases in the Lockheed Information System. In addition to an ERIC microfiche collection and a limited number of basic books on educational topics, this library houses an extensive pamphlet file with cross references to others of its holdings, a reference book collection and a collection of publications from the ERIC clearinghouses, and subscribes to approximately 350 educational journals and newsletters. Interlibrary loan services are available, and as library staff travel to nearby Portland State University twice weekly to borrow or photocopy materials, project staff have assistance in retrieving needed items. Searches of ERIC and other computerized data bases are provided by the library's information retrieval specialist.

Two additional library services support the efforts of project staff to access newly published materials. One is the practice of scanning all periodicals as they arrive and alerting staff as articles and reviews of books in their areas of interest appear. The other is that all materials purchased by NWREL programs are ordered and processed through the library, which enables library staff to 1) inform requesters when materials they wish to purchase are already owned by another program, a time- and money-saving practice; and 2) routinely refer staff of different programs to one another's resource collections when relevant.

In addition to library services and resources, project staff receive assistance in locating materials from staff of other NWREL programs and from people in NWREL management positions who have taken an interest in the project, as well as examining resources available through the Alaska Department of Education's Office of Planning and Research.

This combination of formal institutional information services and collegial support of the project's efforts enables project staff to identify and retrieve materials in a timely and economical manner.

The search, analysis and synthesis procedure is depicted as an information flow on Chart 3 on page 8.

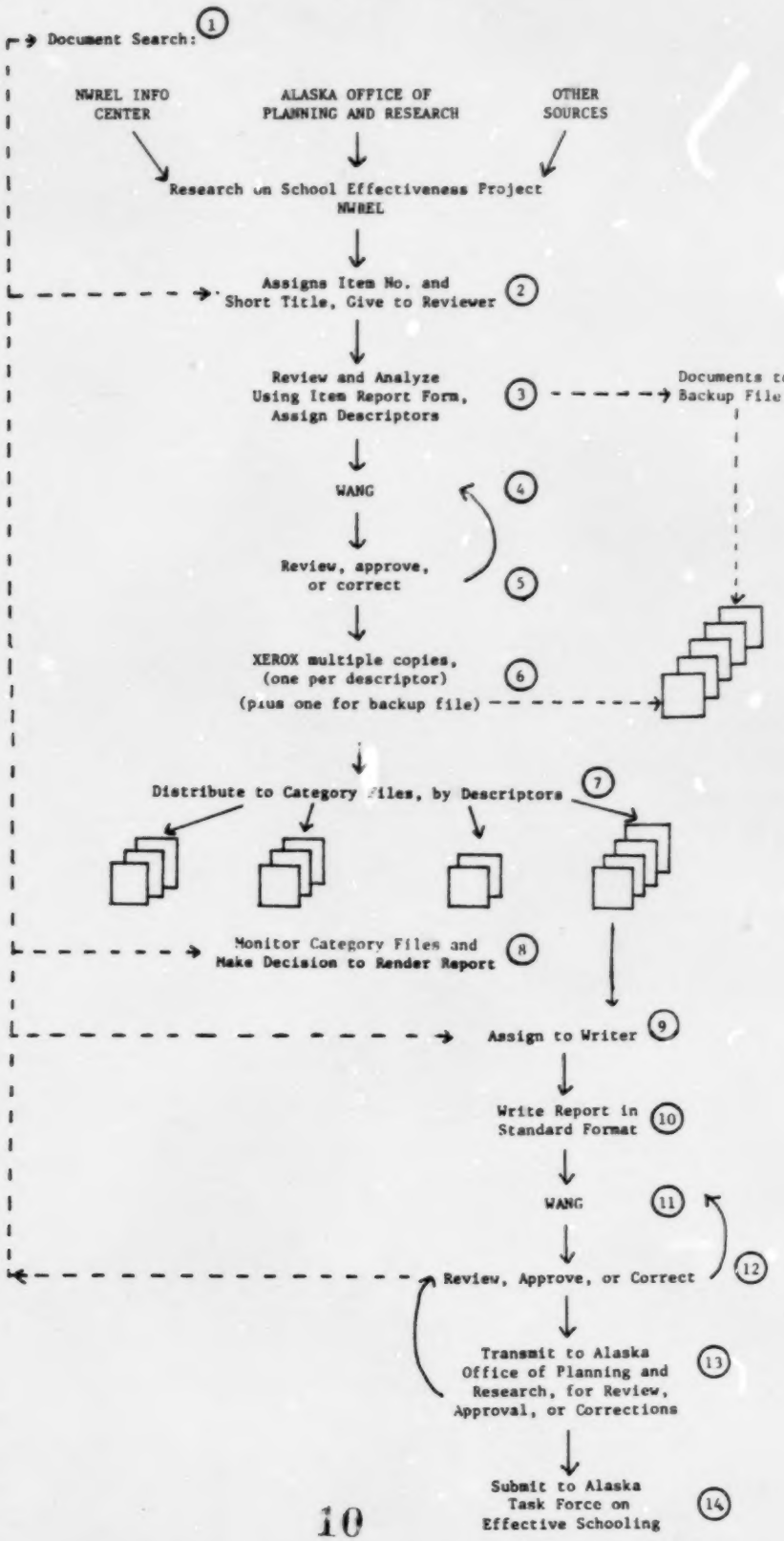
Document searches are organized around the variables listed in Chart 1 and its subsequent versions and are initiated according to priorities negotiated between the Alaska Office of Planning and Research and the contractor.

Once an item is located, it is given a number, a short title and assigned to a reviewer (Step 3). Most items are journal articles or published reports, but other types of documents can be accommodated as well. Primary sources are preferred over secondary sources, but in the early stages of the project secondary sources are necessary and useful. The analysis of each document (Step 3) is conducted using the format called for in the Item Report form, a completed sample of which appears on pages 11 and 12. Most of the headings are self-explanatory but a few deserve mention. For example, the notation Skimmed, Rejected for Project Purposes, No Analysis, when checked, means that a document has been scanned and determined not to be useful for any of the purposes of the project, and no further analysis will be conducted. Immediately below is the notation

CHART 3

RESEARCH ON SCHOOL EFFECTIVENESS PROJECT

Information Flow


Document Search: 1
NWREL INFO CENTER
ALASKA OFFICE OF PLANNING AND RESEARCH
OTHER SOURCES
Research on School Effectiveness Project NWREL
Assigns Item No. and Short Title, Give to Reviewer 2
Review and Analyze Using Item Report Form, Assign Descriptors 3
Documents to Backup File
WANG 4
Review, approve, or correct 5
XEROX multiple copies, (one per descriptor) 6
(plus one for backup file)
Distribute to Category Files, by Descriptors 7
Monitor Category Files and Make Decision to Render Report 8
Assign to Writer 9
Write Report in Standard Format 10
WANG 11
Review, Approve, or Correct 12
Transmit to Alaska Office of Planning and Research, for Review, Approval, or Corrections 13
Submit to Alaska Task Force on Effective Schooling 14



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Relevant ___ Irrelevant ___ for Present Summary Report. This notation is not checked until after the analysis is complete and a decision has been made to include or not include the information in the synthesis of a summary report (Step 10). Another notation which bears comment is Rating of Quality Study. These ratings are made according to the criteria set forth in Standards for Rating Studies, which appears on page 13.

After Item Reports are drafted (Step 3), they are typed into the WANG word processor, printed, reviewed, approved or corrected and approved, and then xeroxed, one copy for each descriptor assigned plus one for a general backup file, and filed by category (Step 7). These categories are the same as the ERIC Descriptors used to identify the variables as first set out in Chart 1.

The category files grow as Item Reports are completed. These files are monitored by the project director, and when sufficient information has been collected, a decision is made to render a summary report (Step 8).

The report is written (Step 10) in a standard format and typed on the WANG word processor. The format for Summary Report by Category is displayed on page 14. Once again, the headings on the form are generally self-explanatory, but one requires comment. The heading, Decision Display, refers to a supporting form, a completed example of which appears on pages 15 and 16. After all of the Item Reports in the file are examined, the writer identifies the issues and restates them as hypotheses. The Decision Display is used to assist in the analysis. The analysis is judgemental; there are no mathematical formulae applied or calculations performed. After analysis, the hypothesis is accepted or rejected and recast as a conclusion in the Summary Report. Some Summary Reports address more than

one issue, result in more than one hypothesis, and Decision Displays yield more than a single conclusion.

In short, the Summary Reports are supported by Decision Displays, which in turn are supported by copies of the Item Reports.

The Summary Reports are reviewed and corrected and/or approved and transmitted through the Alaska Office of Planning and Research to the Governor's Task Force on Effective Schooling (Steps 12, 13 and 14).

An important feature of this whole system is that it is possible to challenge and replicate any report or part of a report (Step 15). By following the dashed lines, it can be seen how the process can be re-entered at most any point. This might be done whenever major additional research becomes available or if the interpretation of any document or group of documents is seriously questioned. Such challenges and changes could be handled without redoing the entire effort. This system provides a flexible, economical way to keep abreast of knowledge about school effectiveness as it becomes available or is reinterpreted. It provides the educational community with a basis for establishing standards on a solid base of research knowledge, while recognizing that what is the best knowledge today could possibly change in the future.

SCHOOL EFFECTIVENESS PROJECT, ITEM REPORT SAMPLE 

ITEM NUMBER: 41 LOCATION: NWREL Info. Cntr. Periodicals

REVIEWER: K. Cotton DATE REVIEWED: 11/19/80

CITATION: Barth, Richard. Home-based reinforcement of school behavior: a review and analysis. Review of Educational Research, 1979, 49, 436-458.

DESCRIPTORS: Parent Participation

SHORT TITLE: Barth, 1979. Home-Based Reinforcement

SKIMMED, REJECTED FOR PROJECT PURPOSES, NO ANALYSIS ___

RELEVANT ✓ IRRELEVANT ___ FOR PRESENT PURPOSES

PRIMARY SOURCE ___ SECONDARY SOURCE X DISSERTATION ABSTRACT ___

RATING OF QUALITY OF STUDY (for project purposes):

(Weak) 1 2 3 [4] 5 (Strong)

BRIEF DISCUSSION OF RATING:

This is an important secondary source with clear findings.

SYNOPSIS:

This is a review of twenty-four studies of home-based reinforcement of school behavior as a method for motivating behavioral change. The review gives special attention to types of consequences employed and methods of gaining parental involvement. The studies reviewed have examined home-based reinforcement programs for children in group homes, in special classes and with entire mainstream and special classes. The programs studies employed a wide range of reinforcers, including food, praise, privileges, etc., and the method of involving parents ranged from intrequent notes/instructions to detailed and frequent parent-school staff conferences. Outcome goals of the programs studies included reduced discipline problems, increased academic achievement (measured variously) and others.

ITEM NUMBER: 41 SHORT TITLE: Barth, 1979
Home-Based Reinforcement

RESEARCHER'S FINDINGS:

Nearly all kinds of home-based reinforcement studies reviewed indicated that the programs produced some desired outcomes, regardless of student characteristics, type of reinforcer, kind of parent involvement procedure or kind of school setting. Person-to-person communication between parent and teacher appeared to result in the most successful home reinforcement programs.

RESEARCHER'S CONCLUSIONS:

Home-based reinforcement efforts are effective in supporting a variety of school-initiated behavior change activities. Care must be taken in phasing out such reinforcement efforts, as some studies indicated a return to less desirable behavior when they were withdrawn.

REVIEWER'S NOTES AND COMMENTS:

An extensive bibliography is included in the Parent Participation backup file.

STANDARDS FOR RATING STUDIES

| Rating | Description |
|---|---|
| 5 | Outstanding study--good design and methodology, appropriate and adequate sample/population, extensive and appropriate data, clear-cut findings which allow for confident generalizations and conclusions. |
| 4 | Very good study--may have minor problems with design, methodology, sample/population or data, but findings are reasonably clear and strongly suggestive. Conclusions drawn are reasonable. |
| 3 | Good study--may have problems with design, methodology, sample/population or data, but findings are clear enough to allow some general conclusions. |
| 2 | Fair study--may have major problems with certain aspects of design, methodology, sample/population or data, but there are some findings which are clear enough to allow certain limited conclusions. This is the lowest quality study acceptable for inclusion. |
| 1 | Poor study--major problems with design, methodology, sample/population or data. Findings unclear or unjustified, no useful conclusions may be drawn. Study not acceptable for inclusion. |

RESEARCH ON SCHOOL EFFECTIVENESS PROJECT

Format for
Summary Report by Category

Topic:

Author:

Date:

Overview:

Findings: (Including discussion of conflicting findings)

Conclusions:

Recommendations: (This could include cases where the recommendation would be that there be no standard)

Decision Display(s):

Bibliography: (Item Nos. and citations)

File of Item Reports: (By item number)

PARENT PARTICIPATION
Decision Display

SAMPLE

Restatement of issue as a hypothesis:

Programs which involve parents in the education of their preschool and elementary school children have a positive effect on the academic achievement of those children.

| Item Number | Short Title | Quality Rating of Study [ ] | |
|---|---|---|---|
| **Items which tend to support hypothesis:** | | | |
| 40 | Bronfenbrenner, 1974. Early Intervention Research Synthesis | [5] | (26 studies support) |
| 41 | Barth, 1979. Home-Based Reinforcement | [4] | |
| 51 | Henderson & Swanson, 1974. Parent Tutoring | [4] | |
| 39 | O'Neil, 1975. Parent Tutoring in Reading | [4] | |
| 33 | Austin, et al., 1977. Parent Involvement in Child Instruction, Low SES | [3] | (18 studies support) |
| 46 | Lee, 1978. Parent Participation in Dental Programs | [3] | |
| 31 | Gillum, et al., 1977. Parent Involvement in Performance Contracts | [2] | |
| 37 | Hickey, 1977. Modifying Work Habits | [2] | |
| 30 | Irvine, et al., 1979. Parent Participation in Preschool Programs | [2] | |
| 52 | McKinney, 1975. Parent Tutoring in Reading and Math | [2] | |
| 32 | Seibert, et al. 1979. Parent School Communication | [2] | |
| **Items which tend to deny hypothesis:** | | | |
| 41 | Barth, 1979. Home-Based Reinforcement | [4] | |
| 68 | Gabel, et al., 1977. Parent Teacher Communication in LD Classes | [4] | |
| **Items which are inconclusive regarding the hypothesis:** | | | |
| 38 | Bedford-Stuyvesant, 1978. Family Education | [2] | |
| 70 | Heisler & Crowley, 1969. Parent Participation in a Depressed Area | [2] | |
| 50 | Olmsted, 1979. Parent Teaching Behavior | [2] | |

Items which were excluded because they were weak:

| | | |
|---|---|---|
| 28 | Imber, et al., 1979. Parent Participation | [1] |
| 69 | Quisenberry, 1980. Home-Oriented Preschool Program | [1] |
| 45 | Robinson, 1978. Citizen Advisory Committees | [1] |

Items which were excluded because they were judged to be irrelevant to this hypothesis:

| | |
|---|---|
| 29 | McLaughlin, et al., 1980. Increasing Parent Participation of Native Americans |
| 42 | Rich, et al., 1979. "Non Deficit" Model for Parent Involvement |
| 44 | Tudor, 1977. Teacher Attitude Toward Parent Involvement |
| 63 | Hartford Public Schools, 1974. Headstart Parent Participation |
| 64 | Townes, et al., 1979. LD Parent Participation |
| 65 | Lincoln, et al., 1975. Parent Participation/Math "Growth Sessions" |
| 66 | Lucas & Lusthans, 1978. Parent Participation, Elementary vs. Secondary |
| 67 | Bridge, 1976. Effective Parent Participation |

APPENDIX

CATEGORIES

(Suggested by Design Group)

Class size
School size
Use of differentialed staff
Teacher certification
Teacher competence in content
Teacher training in pedagogy
Teacher background
Role of principal as instructional leader
Facilities
Finance
Nutrition
Use of homework
Time on task
Instructional practices
Pupil grouping
Match between materials/equipment/technology and pupils
Language background of students
Use of bilingual approaches
Use of teacher evaluation
Staff development efforts
School climate
Administrative policies and practices
Curriculum
Student activities
Parent/community involvement
Attendance
Preschools
Home environment